

Nuclear Waste: What Is It and Where Is It?

- A. In the blanks below, write the number of the statement that best describes the terms that are listed. Use each answer only once.

| Terms | Answers |
|---|--|
| ___ 1. geologic repository | A. byproduct from using radioactive material |
| ___ 2. spent fuel | B. discarded protective clothing, equipment, tools, etc. from reprocessing nuclear fuel and making plutonium weapons |
| ___ 3. fuel rods | C. depends on its origin, level of radioactivity, and potential hazard |
| ___ 4. nuclear waste | D. deep underground facility |
| ___ 5. Nuclear Waste Policy Act of 1982 | E. organization of states with purpose of providing for disposal of low-level waste from all members |
| ___ 6. classification of waste | F. has been used in a nuclear reactor and doesn't contribute efficiently to the nuclear chain reaction |
| ___ 7. transuranic waste | G. hollow metal tubes containing nuclear power plant fuel |
| | H. directs the Department of Energy to study suitable sites for an underground storage facility |

B. List the four categories of nuclear waste and give the source or sources for each type.

1. _____ Source(s): _____

2. _____ Source(s): _____

3. _____ Source(s): _____

4. _____ Source(s): _____

C. Arrange the following phrases in the correct order. Then draw a diagram of the process the sentence describes.

causing the nucleus to split apart
a neutron
releasing energy, fission products, and more neutrons
strikes the nucleus of a uranium-235 atom

D. Indicate whether each statement is true (T) or false (F) by writing the correct letter in the blank. If the statement is false, correct it to make it true.

- _____ 1. The U.S. Department of Energy is responsible for establishing a system for the disposal of high-level radioactive waste.
- _____ 2. Mill tailings contain small amounts of radium that decay to radon, a radioactive gas.
- _____ 3. Transuranics represent the most radioactive category of nuclear waste.
- _____ 4. All radioactive waste must be handled by remote control from behind heavy shielding.
- _____ 5. Nuclear fuel burns.

E. Complete each of the following sentences.

- 1. Nuclear waste requires special disposal because

- 2. The amended Nuclear Waste Policy Act directed the U.S. Department of Energy to perform site characterization on _____ as a candidate site for a geologic repository.
- 3. Some high-level radioactive waste may contain elements that decay very slowly and may remain radioactive for _____ of years.
- 4. There are more than 100 nuclear power plants operating in United States that generate approximately _____ percent of the nation's electricity.
- 5. Approximately 9,000 metric tons of defense high-level waste are currently stored at three DOE sites: the _____; the _____; and the _____.